UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,610	04/19/2001	David H. Miller	97-4	3513

7590	11/09/2004

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EXAMINER
TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 11/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Advisory Action	09/838,610	MILLER ET AL.
	Examiner	**Art Unit**	
	Joseph D. Torres	2133	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 12 October 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may <u>only</u> be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

<u>PERIOD FOR REPLY</u> [check either a) or b)]

a) ☒ The period for reply expires <u>3</u> months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☒ The proposed amendment(s) will not be entered because:

    (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);

    (b) ☐ they raise the issue of new matter (see Note below);

    (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

    (d) ☒ they present additional claims without canceling a corresponding number of finally rejected claims.

        NOTE: *New language not previously considered was added to claim 4..*

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *See Continuation Sheet*.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☒ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

    The status of the claim(s) is (or will be) as follows:

    Claim(s) allowed: _____.

    Claim(s) objected to: _____.

    Claim(s) rejected: *1,3-14 and 16-20*.

    Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____

Joseph D. Torres, PhD
Primary Examiner
Art Unit: 2133

Continuation of 5. does NOT place the application in condition for allowance because: In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "In particular, the GFa(2m) representation is not an ordered pair of subfield elements that represent an element of the whole field. The Okita patent discloses or suggests nothing with regard to the use of an ordered pair of subfield elements to represent an element of the whole field.") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In particular, nowhere does claim 1 even use the language "an ordered pair of subfield elements to represent an element of the whole field".

The Applicant contends, "The examiner has taken the position that that a quadratic equation is a polynomial; hence ... the Okita patent encompasses and includes Galois Fields comprised of subfield extensions over quadratic polynomials, i.e., quadratic-subfields of a Galois-field". The Examiner asserts that the Quadratic equation is derived from a second degree polynomial and quadratic equations are in one-to-one correspondence with the second degree polynomial from which it is derived, that is, there would be no Quadratic Equations without second degree polynomials (http://mathworld.wolfram.com/QuadraticEquation.html).

The Applicant contends, "There is no disclosure or suggestion contained in the Okita patent regarding translating an external Galois-field representation of a received code into an internal quadratic-subfield Galois-field representation of the code" ... "this is not the case, and the Examiner has improperly extended the express teachings of the Okita patent to assert that quadratic-subfield representations of the code were envisioned by Okita". The Examiner disagrees and asserts that Galois fields cannot be isolated from what it is and Galois field theory is the theory of field extensions: a Galois field is a filed extension over an irreducible polynomial extended using the roots of the polynomial, hence there is no difference between a quadratic-subfield Galois-field and a Galois-field (http://www.ee.ucla.edu/~matache/rsc/node2.html, http://www.ee.ucla.edu/~matache/rsc/node4.html#SECTION00022000000000000000).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Cameron, in an analogous art, teaches using Forney algorithms to calculate error values (Forney algorithm circuit 15 in Cameron). One of ordinary skill in the art at the time the invention was made would have been highly motivated to combine the teachings of the Okita patent with the teachings in the Cameron patent since the error correction system in the Okita patent requires a means for determining error values and Forney's algorithm is a well-known means, that one of ordinary skill would have been apprised of, for determining error values. Note: Cameron explicitly teaches how a modified Berlekamp-Massey algorithm can replace the traditional Berlekamp-Massey algorithm to calculate the error position Lambda polynomial (col. 4 in Cameron).
Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Forney with the teachings of Cameron by including use of a Chien-Forney module using Forney algorithms to calculate error values. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a Chien-Forney module using Forney algorithms to calculate error values would have provided the opportunity to implement the Error correction system in the Okita patent by including a required means for determining error values.